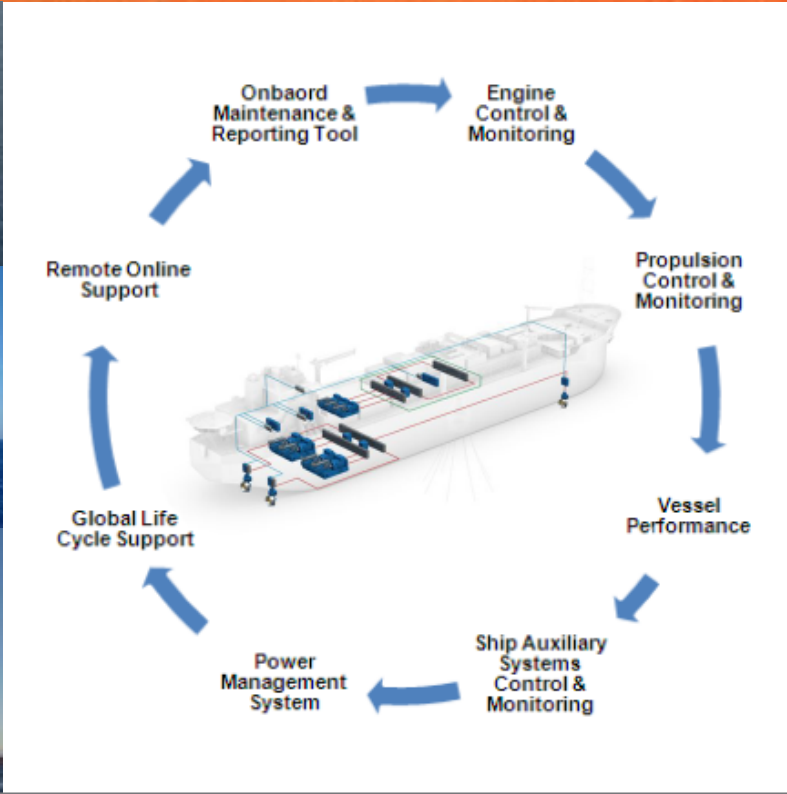


WÄRTSILÄ IAS XT

- INTEGRATED AUTOMATION SYSTEM

ENERGY
ENVIRONMENT
ECONOMY



French Navy, Dominique Pipet ©

AUTOMATION UPGRADE, RETROFIT & CONVERSION SOLUTIONS

Wärtsilä is in a unique position to use proven in-house marine automation products to offer a 'One-Stop' solution with minimal integration, installation and commissioning risks to the customer.

Customers also benefit from Wärtsilä's in-house expertise of engine and propulsion control systems, together with the global services reach and lifecycle product support.

Our experience of upgrade and retrofitting of installed automation systems is not limited to in-house Wärtsilä automation systems, but include third party obsolete or legacy systems such as

- Stromberg Selma
- Norcontrol DC7 and DC2000
- Valmet Damatic
- Racal Decca Isis
- Norimos 2000
- Moland Macon 100, to name a few.

WÄRTSILÄ AUTOMATION SOLUTIONS

The Wärtsilä Integrated Automation System (IAS) family of,

- Wärtsilä IAS LT
- Wärtsilä IAS
- Wärtsilä IAS XT

is a flexible and modular automation platform capable of providing a range of functionality from basic Alarm & Monitoring to advanced Integrated Automation Systems.

Significant savings can be achieved by upgrading or retrofitting an ageing installation. For example, an improved automation system increases system reliability, detects process malfunctions faster, reduces operator intervention and meets new operational requirements.

In these cases, Wärtsilä can provide a full turnkey solution. Wärtsilä provides solutions from a small automation modernisation project to a full conversion.

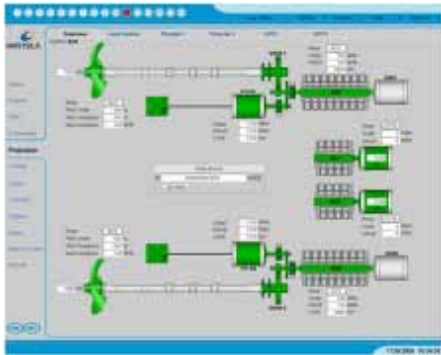
WÄRTSILÄ IAS XT

Wärtsilä IAS XT extends the capability of Wärtsilä IAS by integrating with smart Vessel Performance & Information System, Condition Based Monitoring of Engines & Propulsion and Remote Online Support.

This advanced IAS level provides all functionality normally delivered with Wärtsilä IAS, which includes seamless integration of Wärtsilä's advanced Power Management System, Engine Control and Propulsion Control systems.

Interfacing with complex Dynamic Positioning (DP) system and other bridge and navigational systems is also available.

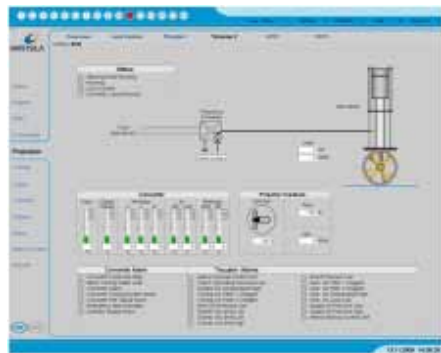




Propulsion Control

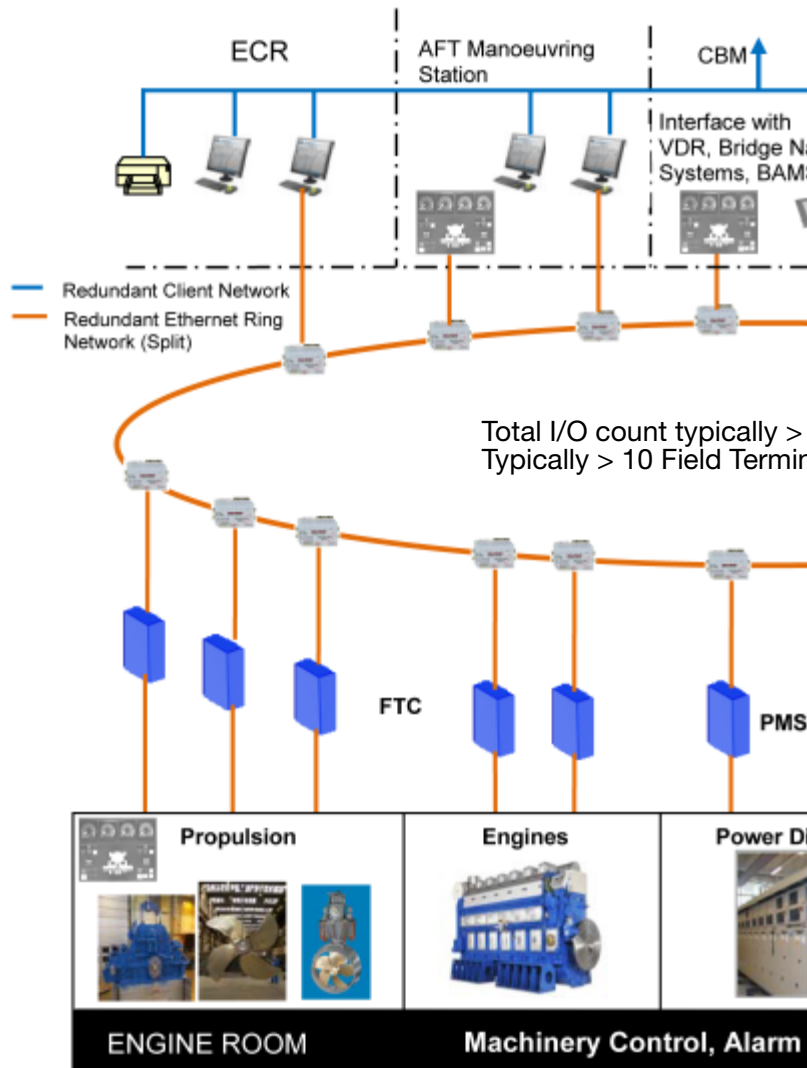


Engine Control



Thruster Control

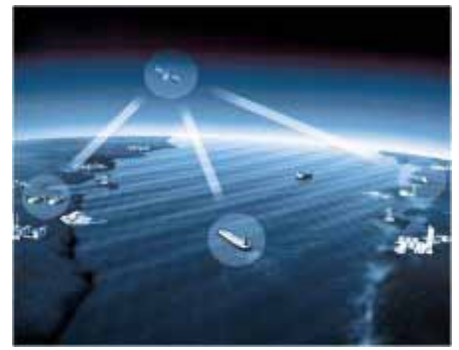
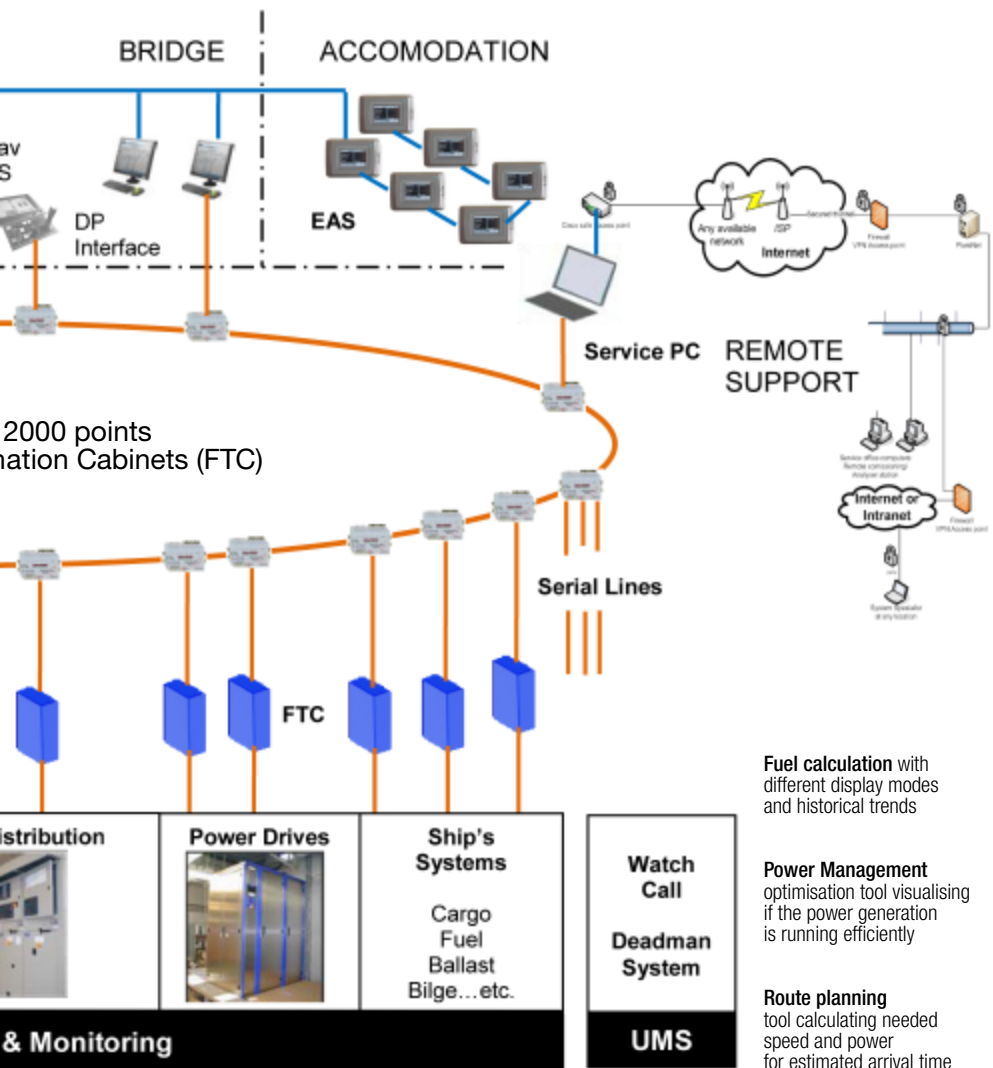
Wärtsilä I
Typical To



MAIN FEATURES

- Integrated Control and Monitoring of engine, propulsion and thrusters
- Integrated Power Management System (PMS) of ships' power plant and power distribution system
- Alarm & Monitoring of ship's support and auxiliary systems
- Enhanced system verification
- High reliability – dual redundant system
- System design and hardware approved by most major classification societies for marine installations
- Intuitive user-friendly standard HMI screen design
- Trend Analysis tool for viewing of historical and real-time data
- Reduced interfaces and cabling
- All electronic equipment is protected against sustained over-voltage, earth fault and EMI
- Monitoring of machinery runhours
- Extended Alarm System and Deadman System meets Classification UMS requirements
- Continuous on-line health monitoring of system status and performance
- Use of standardized commercial off-the-shelf hardware improves life support of spares
- Flexibility in extending standard IAS design to meet customer requirements
- Monitoring of machinery runhours
- Integration with Vessel Performance System
- Integrated Onboard Maintenance and Reporting Tools
- Integrated Information System
- Integrated Remote On-line Monitoring & Support
- Interfacing with Dynamic Positioning (DP) systems
- Interfacing with Voyage Data Recorder (VDR)
- Interfacing with Bridge Alarm Monitoring System (BAMS)

AS XT
ology



Condition Based Maintenance (CBM)



Power Management System (PMS)



Vessel Performance ECOmeter

Fuel calculation with different display modes and historical trends

Power Management optimisation tool visualising if the power generation is running efficiently

Route planning tool calculating needed speed and power for estimated arrival time

TYPICAL SHIP SYSTEMS INTEGRATION

- Cargo control with integrated tank sounding system
- Ballast, Bilge, Cooling and Fuel systems
- Tank washing system
- Oil recovery operation mode
- Integrated LNG control for DF engines
- Customised vessel requirements

APPLICATIONS

- Complex diesel electric offshore and special vessels
- Large FPSO and offshore production platforms
- Large cruise vessels
- Naval

BENEFITS

- Proven in-house developed solutions best suited for complex diesel electric vessels
- Scalable modular design
- Reliability – dual redundant system
- Single point of contact to owners & yards
- System design and hardware approved by most classification societies for marine installations
- User-friendly intuitive and standardized HMI screen design
- Patented Low Loss Concept (LLC) Power Management System with unique Blackout prevention capability.
- Reduced life cycle cost due to optimum monitoring and handling of Wärtsilä products
- Proven track record in complex offshore and special vessel applications
- Remote online support capability
- 24/7 Global Services footprint



■ ■ ■ **WÄRTSILÄ ELECTRICAL & AUTOMATION SERVICES**

To keep your automation system functioning safely and reliably, Wärtsilä offers automation modernisation solutions that improve performance, extend the lifecycle, and minimise risk.

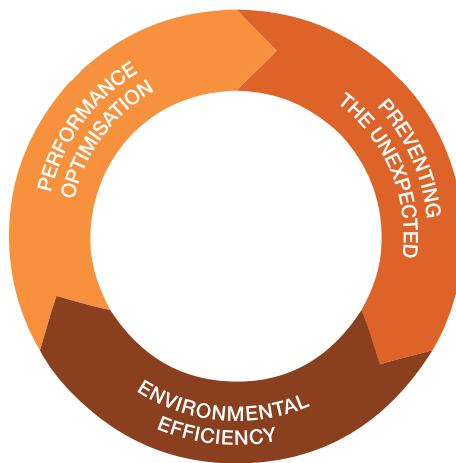
PERFORMANCE OPTIMISATION

Our customers are looking for strategies to improve efficiency and reduce maintenance costs. Automation upgrades focus on obsolescence management of key components of your installed system such as processors, operator interface equipment, printers, etc. Upgrades reduce the maintenance cost of the existing system and a low-cost easier solution to implement.

PREVENTING THE UNEXPECTED

Our customers require guaranteed performance and risk management. Automation retrofits involve an extensive

system upgrade of the installed Wärtsilä automation systems that would typically include replacing of hardware and software of the existing system.



Where possible, re-use of existing components such as sensors, cables and cabinets is maximised. A retrofit manages issues of obsolescence, enhances functionality and increases the reliability of the installed automation system. Retrofits also

address new Classification requirements and guarantees lifecycle support of the system for the remaining life of the vessel

Our experience of upgrade and retrofitting of installed automation systems is not limited to in-house Wärtsilä automation systems, but include third party obsolete or legacy systems such as

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VESSEL OPTIMISATION

For automation conversions of existing vessels for new use or duty, more significant alterations may be necessary. In these cases, Wärtsilä can provide full turnkey modernisation and conversion solution.

For further information, please contact: service.solutions@wartsila.com

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